Rapid Development and Evaluation of a Virtual Education Program to Support Providers Caring for People with Intellectual and Developmental Disabilities during COVID-19

Anupam Thakur, Cheryl Pereira, Jenny Hardy, Nicole Bobbette, Sanjeev Sockalingam, Yona Lunsky

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Abstract

Background: People with intellectual and developmental disabilities are at increased health related risks due to the COVID-19 pandemic. Virtual training programs that support providers in caring for the physical and mental health needs of this population, as well provide psychological support to the providers themselves are favourable during the pandemic.

Objective: This study describes the design, implementation and evaluation of a virtual educational COVID focused ECHO® program to support providers in caring for the mental health of the IDD population during the COVID-19 pandemic.

Methods: A rapid design thinking approach was used to develop a 6-session long program, with sessions incorporating mindfulness practice, a wellness check, COVID-19 related research and policy updates, a didactic presentation on a combination mental health and COVID related topic, and a case-based discussion to encourage practical learning. The program was evaluated using Moore's evaluation framework, specifically looking at levels 1-5 (participation, satisfaction, learning, self-efficacy and change in practice), as well as additional reflection measures around innovations to the program. Qualitative feedback from open-text responses were analysed using a modified manifest content analysis.

Results: Care providers from both health and disability service sectors (n=104) participated in the program. High levels of engagement (81 participants per session on average) and satisfaction (overall mean satisfaction score of 4.31±0.17 out of 5) were observed. Statistically significant improvements in mean self-efficacy scores (19.8%) and mean scores on support and coping measures were seen. Participants also rated high agreement with the newly developed COVID-19 program and its innovative components. Open text feedback responses showed participants felt: ECHO expanded their knowledge and competency, and created this sense of being part of a community of practice; there was value seen for the COVID-19 innovations; ECHO supported the gaining and sharing of resources not just within the smaller group of participants, but with their broader teams and organizations as well; ECHO facilitated changes to participants' practice via their approach to client care, and increased confidence in supporting clients and families.

Conclusions: ECHO is an effective model for capacity building programs with a shared learning approach. Future iterations should include targeted evaluation of long term outcomes such as staff burn out. Clinical Trial: This research work doesn't involve a clinical trial.

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Background: People with intellectual and developmental disabilities are at increased health related

risks due to the Corona virus 2019 (COVID-19) pandemic. Virtual training programs that support providers in caring for the physical and mental health needs of this population, as well provide psychological support to the providers themselves are favourable during the pandemic.

Objective: This paper describes the design, delivery and evaluation of a virtual educational COVID-19 focused Extension for Community Healthcare Outcomes (ECHO®) program to support providers in caring for the mental health of the Intellectual and developmental disabilities (IDD) population during the COVID-19 pandemic.

Methods: A rapid design thinking approach was used to develop a 6-session long program, with sessions incorporating mindfulness practice, a wellness check, COVID-19 related research and policy updates, a didactic presentation on a combination mental health and COVID-19 related topic, and a case-based discussion to encourage practical learning. The program was evaluated using Moore's evaluation framework, specifically looking at levels 1-5 (participation, satisfaction, learning, self-efficacy and change in practice), as well as additional reflection measures around innovations to the program. Qualitative feedback from open-text responses were analysed using a modified manifest content analysis.

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care, and increased confidence in supporting clients and families.

Conclusion: ECHO is an effective model for capacity building programs with a shared learning approach. Future iterations should include targeted evaluation of long-term outcomes such as staff burn out.

Keywords

COVID-19, Coronavirus, pandemic, intellectual disability, mental health, community of practice, ECHO, virtual, capacity-building

Introduction

Countries across the world have responded to the Corona virus 2019 (COVID-19) pandemic through rapid deployment of public health measures and hospital-based care for the acutely unwell. Various population groups, including people with intellectual and developmental disabilities (IDD),

are marginalized and underserved in the healthcare system, both during and prior to COVID-19 [1].

They are at increased risk for poorer outcomes since COVID-19, including a higher risk of infection,

and severe complications and mortality secondary to COVID-19 infection [1-5]. The COVID-19

pandemic presents with the twin challenges of: 1) clinical vulnerabilities in people with IDD [4], and

2) the need to respond swiftly to ever evolving information. Social service providers (SSP) and

health care providers (HCP) play a major role in caring for this marginalized group in the community

[6, 7]. Increased vulnerability to risk of infections, as well as lack of information about supporting

the needs of people with IDD, calls for effective training programs for health and community service

providers.

In addition to caring for others, experiences from previous pandemics suggest the need to

support healthcare workers by increasing their mental health awareness and encouraging self-care

[8]. HCPs and supporting staff in the community are facing psychological distress during COVID-19

as a result of high levels of uncertainty about the illness, rising mortality rates[4], lack of an effective

cure and risks to personal safety and loved ones[8, 9]. Emerging COVID-19 literature as well as

studies from previous pandemics have highlighted the risk and negative impacts of moral distress

and injury in HCPs [10, 11] and SSPs[7].

Virtual educational programs can overcome barriers to training in a pandemic situation

arising from physical distancing, quarantine and other isolation measures [12]. Project Extension for

Community Healthcare Outcomes (ECHO®) is a widely used virtual education model implemented

globally to build capacity and create virtual communities of practice [13, 14]. The model helps to

address issues related to complexities in care, disparities in access to care and rapid diffusion of

evidence-based practices [14] . It leverages videoconferencing technology to create a virtual

community of practice, whereby primary care and other health care providers ("spokes") connect

with specialist teams ("hubs") to collaborate, learn and share best practices through regularly

scheduled sessions. Each session typically consists of a brief didactic presentation on a relevant

disease-related topic, followed by a spoke provider presentation on an anonymized complex patient case they are managing in their clinic, and then a community discussion to consolidate learning and work through the case to develop practical recommendations for the provider to take back to their practice [13, 14].

Organizations globally have adapted the ECHO model for their respective COVID-19 specific needs. A recent study reported the use of the ECHO model in supporting HCPs mental wellbeing and resilience at the time of COVID-19 [15]. However, use of the ECHO model to support SSPs and HCPs together in caring for people with IDD during the pandemic has yet to be reported.

COVID-19 was declared a pandemic on March 11, 2020, causing SSPs and HCPs supporting people with IDD to face new and unprecedented challenges in community settings. In response, we leveraged the ECHO model to develop ECHO Ontario Adult Intellectual & Developmental Disabilities: Mental Health in the Time of COVID-19 (ECHO AIDD-COVID), a targeted virtual educational program to support care providers working together from the disability and health sectors. The purpose of the program was to share best practices in caring for the mental health of the IDD population during the COVID-19 pandemic and to reduce feelings of isolation and burnout through new connections and sharing of resources. This paper aims to describe the rapid development and evaluation of the ECHO AIDD-COVID program. We hypothesized that this program would improve participants' self-efficacy in supporting and managing the mental health issues of people with IDD during COVID-19.

Methods

The rampant increase in COVID-19 cases in the winter of 2020, and the subsequent need to enhance and strengthen skills of care workers led to the rapid planning and development of a COVID-19 focused ECHO program. This program was an adaptation of an existing 12-session ECHO program launched prior to COVID-19, ECHO Ontario Adult Intellectual & Developmental Disabilities

(ECHO Ontario AIDD), focused on caring for the mental health of people with IDD[16].

A *rapid design thinking* approach [17] over two weeks, similar to plan-do-study-act cycles guided our development process. Design thinking is a step-wise approach that involves observation, collaboration, fast learning, the visualization of ideas, rapid prototyping, feedback gathering, and redesign [18, 19]. It is human-centred, incorporates creative problem-solving, co-design, low-fidelity prototyping, and has an iterative design and "bias towards action" [18,19]. With the uncertainties of COVID-19 and the ongoing rapidly emerging information, a flexible process that allowed for quick adjustments to be made when developing and running programs was needed. Design thinking facilitated such changes to be made, and offered a structure for building creative and innovative solutions to complex problems that involve uncertainty [17]. It was the preferred approach as compared to other innovation frameworks due to its added advantage of accelerated prototyping and testing. The key steps in this approach includes inspiration, ideation and implementation [17].

Stage 1 (*inspiration*): This is represented by the problem or opportunity at hand. In our case, it was the challenges COVID-19 created for providers caring for people with IDD, including the mental health impacts on clients and providers alike, and the need for rapid capacity building and connection in the community sector.

Stage 2 (*ideation*): This involves brainstorming and refinement of ideas and solutions. We met several times with project leads, hub members and members of the ECHO program team to explore ways to leverage existing operational structures and the collective expertise of the multi-disciplinary ECHO Ontario AIDD team members.

Stage 3 (*implementation*): In this phase, potential solutions are developed, shared with target users and evaluated for feedback. A *prototype* product (ECHO AIDD-COVID) was developed with COVID-19 pandemic focused innovations within the existing structure and curriculum of the ECHO AIDD-COVID program. Prototype is a description used in rapid design framework to develop best possible solutions for the identified problems [17, 20]. The

innovative solutions in our prototype were: i) a curriculum that integrated COVID-19, mental health, and IDD; ii) curated COVID-19 updates; iii) wellness checks and mindfulness sessions for self-care and wellness; and iv) a family member as one of the content experts in the hub. Content experts in the team had identified several unique COVID-19 mental health challenges in people with IDD and it was important to create opportunities to rapidly upskill care providers in the community. Moreover, the "infodemic" of COVID-19 information highlighted the need to provide authentic, updated and timely COVID-19 information to care providers [21]. The specially designed curriculum and COVID-19 updates were creative solutions tailored for this purpose. Family members with lived experience as content experts in the hub brought an important perspective to the pedagogy of the program, specifically by providing insight into how the learnings discussed in ECHO translated to the realistic care of clients through first-hand experience. Early reports from the pandemic highlighted the need to provide wellness tools to care providers to prevent burn-out. Integration of wellness checks and mindfulness within the program was an innovative blend of educational and therapeutic to address this concern.

ECHO AIDD-COVID Program

Participation in the ECHO AIDD-COVID program was open to all care providers, both SSPs and HCPs, working with people with IDD in the province of Ontario, Canada. Recruitment involved emailed invitation flyers to all previous participants of ECHO programs at the Centre for Addiction and Mental Health (CAMH), as well to developmental service agencies, community mental health organizations, professional accrediting colleges, and primary care sites in Ontario. Providers that were interested in participating completed an online application form. All applicants other than students were accepted in to the program. Students were excluded in order to keep space for those individuals providing care during the COVID-19 pandemic.

We assembled a hub team comprising of a psychiatrist, psychologist, primary care physician, behaviour therapist, occupational therapist, nurse, social worker, and family advisor (parent of an adult with IDD). Strengths of the team included expertise in primary care, mental health, IDD, and experience of working directly with people with IDD during COVID-19 and managing psychological distress.

The curriculum was developed using a triangulation of sources, including feedback from a prior needs assessment [22], evaluation of the recently piloted ECHO Ontario AIDD cycle, review of COVID-19 literature on evidence-based practices to support HCP, and consensus discussions within the hub members. Concerns related to impact of COVID-19 pandemic on people with IDD include deterioration in mental health, worsening of challenging behaviors, over-prescription of medications and diagnostic overshadowing [23]. Hence, mental health was an important part of this program. Caregiver strain was identified as another area of need. The final list of topics were: COVID-19 overview (with relevance to IDD); staff wellness and self-care; advanced care planning and supported healthcare decision-making during COVID-19; depression, anxiety and evaluating risk; supporting families during COVID-19 and family interventions; and grief and loss. Not knowing how long people would be willing and able to participate in an ECHO during the pandemic, we opted for 6 sessions which seemed long enough to present key material and form a community of practice while remaining efficient at spreading information.

The weekly 1.5-hour long sessions ran from 17th of April, 2020 to 22nd May, 2020 over six weeks, which is half the length of the previous 12-week version of ECHO Ontario AIDD. In terms of session structure, each session included introductions, a mindfulness exercise led by the family advisor, a wellness check, COVID-19 related research and policy updates, a didactic presentation based on the curriculum topic for the day, and a case-based discussion in which a participant care provider presented a case to gain support and illustrate complexities in caring for people with IDD in conjunction with the impact of COVID-19. Additionally, an online ECHO AIDD-COVID resource

portal with reference materials related to the ECHO was available to the participants for use during and beyond the sessions. The dual focus of the sessions was on skill development in IDD, mental health issues in particular as well as psychological wellbeing of participants. The innovations described earlier were integrated in to the ECHO sessions seamlessly. Evidence-based resources were shared with participants and could be accessed after the course.

Evaluation

Our evaluation strategy was informed by Moore's Evaluation framework for continuing professional development, specifically levels 1-5 (participation, satisfaction, learning, self-efficacy and change in practice) [24]. This framework has been used globally to structure evaluations for ECHO [25-27]. Additional questions around participation in the program within the COVID pandemic context, as well as reflections on innovations to the program were asked.

Participation: Basic participant demographic information including profession, practice setting, and attendance was collected throughout the duration of the program.

Satisfaction: Participant satisfaction was measured weekly using online post-session satisfaction questionnaires. Statements were rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree), and focused on expanded knowledge and skills, reduced professional isolation, addressed learning needs, recommend session to others, and overall satisfaction. Qualitative feedback was obtained through open text responses for questions asking about suggestions for curriculum topics and overall comments/feedback.

Learning/Competence: Participants' perceived self-efficacy on four core program competencies around providing IDD care during COVID-19 was assessed pre- and post- participation, using a previously established 100-point confidence scale (higher number = higher confidence) [25] . Competencies were developed by the ECHO AIDD-COVID hub team through team discussions on

personal experience, review of the literature on care providers' challenges with managing mental health care in the IDD population during the pandemic, and expert consensus.

Change in practice: Participants responded using a binary scale (1=yes; 0=no) to whether participation in the program resulted in a change in their practice, and were prompted to provide examples through open-text feedback.

Experiences with the COVID-19 pandemic: Feedback in this area was collected using a pre- and post- 5-point Likert scale (1 = strongly disagree; 5 = strongly agree) on two items: having professional support and being equipped to cope with stressors (i.e. fear of contagion, rapid spread of virus, risk to self/client/family/friends, etc.) related to the pandemic.

Reflection questions around innovations to the program (including integration of SSPs and HCPs, COVID-19 strategy sharing, inclusion of mindfulness practice, support from the community of practice, and sharing of COVID-19 updates) were asked post participation, with responses captured on a 5-point agreement Likert scale. Participants were also asked to comment on how participation in the ECHO AIDD-COVID program impacted the challenges they experienced during COVID-19 though open-text.

Evaluation measures and datasets generated and analysed in this report were part of program evaluation at CAMH.

Data analysis

All quantitative data was analyzed using either Microsoft Excel or Statistical Package for the Social Sciences (SPSS) Version 21. Frequencies and percentages were calculated for categorical variables, and means and standard deviations for continuous variables. Pre-post paired data on

experiences with the COVID-19 pandemic and self-efficacy were analyzed using either paired t-tests

or Wilcoxon signed-rank tests, as appropriate. Statistical tests were two-sided, with a statistical

significance level of 5%.

A preliminary modified manifest content analysis was conducted using the NVivo 12

software to evaluate open-text responses on program participation and the impact to challenges

experienced during COVID-19. The analytic approach involved a project team member uploading all

open-text responses into NVivo to facilitate analysis. Following this, they reviewed and did open

coding on all the text. The larger project team then came together in an ongoing manner to review

and discuss coding to develop and refine a coding matrix with definitions. The coding matrix was

then applied to all the text, and references for each code were reviewed and frequencies calculated.

Finally, all the codes were summarized and organized for interpretation [28, 29].

Results

A total of 104 participating care providers with diverse professional backgrounds from 56

organizations across Ontario, Canada (Table 1) attended one or more sessions. The mean participant

attendance per session was 81, and more than 88% of participants attended at least half of the

sessions.

Table I: Participant Demographics

Participants by Profession (n=104)	N (%)
Access Coordinator/Service Navigator	2 (1.9%)
Administrator	5 (4.8%)
Behaviour Analyst	6 (5.8%)
Case Worker/Manager	23 (22.1%)
Developmental Services Professional	16 (15.4%)
MD	8 (7.7%)
Nursing Professional (RN, RPN, Nurse Practitioner)	8 (7.7%)
Occupational Therapist	2 (1.9%)
Other (Pharmacist, Speech Language Pathologist)	4 (3.8%)

Psychologist/Psychotherapist	2 (1.9%)
Social Worker	19 (18.3%)
Support Worker	9 (8.7%)
Organizations by Practice Setting (n=56)	**N (%)**
Academic Hospital	3 (5%)
Community Health Centre	3 (5%)
Community Mental Health Agency	6 (11%)
Community Mental Health and Addictions Agency	1 (2%)
Community Support Services Agency	10 (18%)
Developmental Services Community Agency	28 (50%)
Family Health Group	1 (2%)
Family Health Team	1 (2%)
Other	1 (2%)
Private Practice / Solo Practitioner	2 (4%)

High mean weekly satisfaction scores were observed, ranging from 4.07±0.18 - 4.32±0.14, out of 5, with overall satisfaction score of 4.31±0.17. (Table 2).

Item	Mean Rating (n=228)[a]
The session content expanded my existing skills and knowledge.	4.07±0.18
This session has addressed my learning needs.	4.15±0.07

This session has reduced my professional isolation.	4.21±0.18
I would recommend this session to others.	4.32±0.14
Overall, I was satisfied with the session.	4.31±0.17

Table 2: **Mean ratings for items on the satisfaction survey across the 6-week cycle**

[a]Total number of completed surveys received

Forty-two participants in ECHO completed both the pre and post-program self-efficacy and experiences with the COVID-19 pandemic questionnaires. Mean self-efficacy scores prior to participation in ECHO were 61.3±18.2% and post-ECHO scores were 81.1±9.8%, with a statistically significant difference (improvement) observed pre to post for overall mean paired responses (t(41)= -9.035, P<.001; d=1.394). Further analysis of individual statements (core program competencies) showed statistically significant improvement in mean self-efficacy scores. Statistically significant differences were also seen for pre- ECHO to post-ECHO mean scores for both statements on experiences with COVID-19 (i.e. professional support and being equipped to cope with stressors related to the pandemic). Table 3 shows mean self-efficacy scores for individual core program competency statements and mean scores for experience with COVID-19 items.

Table 3: Change in confidence and experience with COVID-19 pre-post participation in the ECHO AIDD-COVID program

Core Program Competencies[a] (n=42)	Pre Mean Scores	Post Mean Scores	Difference in Scores
Communicate effectively and prepare for person and family-centered care for adults with IDD during the	65.38 ± 20.22	81.83 ± 9.79	16.45 ± 17.72

COVID-19 pandemic [b]			
Support and manage the mental health of individuals with or suspected of having IDD during the COVID-19 pandemic [c]	56.47 ± 20.06	77.88 ± 13.54	21.40 ± 16.39
Manage burnout and build resilience in myself, other healthcare and developmental service professionals, and caregivers during the COVID-19 pandemic [d]	57.57 ± 22.34	78.52 ± 12.08	20.95 ± 21.44
Work effectively in/with inter-professional and intra-professional teams across health and social systems during the COVID-19 pandemic to support the care of clients with IDD [e]	69.33 ± 18.04	86.07 ± 10.09	16.74 ± 15.72
COVID-19 Experience items[f] (n=42)	**Pre Mean Scores**	**Post Mean Scores**	**Difference in Scores**
I feel I have enough professional support and resources for myself to continue caring for my clients during this time[g]	3.45 ±0.89	4.10 ± 0.62	0.64. ± 0.82
I feel equipped to cope with stressors (i.e. fear of contagion, rapid spread of virus, risk to self/client/family/friends, etc.) related to the COVID-19 pandemic[h]	3.17 ±0.93	4.10 ± 0.66)	0.93 ± 0.87

[a] Wilcoxon Signed-Ranks Test and Paired Samples T-Test conducted for statements.

[b] Z= -4.728, *P*<.001; r=0.730

[c] t(41)= -8.464, *P*<.001; d=1.306

[d] t(41)= -6.335, *P*,<.001; d=0.977

[e] t(41)= -6.902, *P*<.001; d=1.065

[f] Paired Samples T-Test conducted for all statements.

[g] t(41)= -5.074, *P*<.001; d=0.783

[h] t(41)= -6.945, *P*<.001; d=1.072

Analysis of the 53 open-text responses around the impact of ECHO participation on challenges experienced by participants during COVID-19 is summarized in Table 4. Key areas that emerged within the responses included: ECHO expanding participants' knowledge and competency (54.7%), being part of a community of practice in ECHO (47.2%), reflections on the value of the COVID-19 innovations (39.7%), ECHO supporting the gaining and sharing of resources not just within the smaller ECHO community, but with participants' broader teams and organizations (34%), ECHO facilitating changes to participants' practice via their approach to client care (18.9%), and feelings of increased confidence in supporting clients and families (5.7%).

Table 4: Key areas that emerged from open-text responses

Key Areas	# of Participants (%) (N=53)
Expanding Knowledge and Competency • *Benefits of case-based learning (9)* • *Improvements to knowledge and awareness (13)* • *Increased learning through inter-professional education (5)*	29 (54.7)
Being part of a community of Practice • *Supporting and learning from one another (9)* • *Validation from others (2)*	25 (47.2)
Reflections on COVID-19 Innovations • *Benefits of mindfulness (4)* • *Increases in COVID-19 Knowledge (12)* • *Value of family perspective (5)*	21 (39.7)
Gaining and Sharing Resources • *Sharing resources with broader teams and organizations (3)*	18 (34)
Facilitating Changes to Practice • *Application of knowledge in client care (7)*	10 (18.9)
Increased Confidence in Supporting Clients and Families	3 (5.7)

Participants were also asked about participation in ECHO having an impact on practice. Eighty seven percent of participants reported participation in ECHO AIDD-COVID resulted in a change in their practice and an equal number were in favour of this program running again (n=53). Ninety six percent of the participants reported their learning needs were met in the program (n=53). The reflection questionnaire around prototype innovations in the program was completed by 53 participants. An overwhelming 98% of participants agreed ECHO AIDD-COVID made them feel supported and part of a virtual community of practice. One participant commented that it was "so nice to know that we are not alone in this strange time and share the same challenges" and that they will "miss this weekly touch point with professionals". A similar percentage of participants (98%) reported COVID-19 updates and resources as valuable; one participant shared "there were innovative strategies suggested in each session as well as content in the presentations that I believe helped improve my approach day to day with the clients I have been supporting". Furthermore, ninety-four percent of participants agreed or strongly agreed that having both inter-professional HCPs and SSPs enhanced their learning. Most participants (96%) also reported that having a family member in the hub enhanced their learning. The impact of the family perspective is best illustrated by one of the participants, when they shared that:

> "the most powerful experiences I had was whenever the family member spoke. I think we all can hypothetically understand caregivers' perspectives, but we cannot understand the full emotional toll or the personal thoughts and worries that caregivers have."

A similar percentage (96%) of participants appreciated the opportunity to share strategies in the community. The weekly mindfulness exercise led by the family advisor was reported to be helpful by 77% of the participants and functioned to "remind us to take care of ourselves".

Discussion

We describe the successful development and evaluation of a COVID-19 focused ECHO program for workers caring for people with IDD in this paper. A rapid design thinking approach was used to develop the ECHO AIDD-COVID program. Evaluation findings showed high levels of engagement and satisfaction with the program, with the majority of participants reporting changing their practice because of it. This paper is the first to document use of the ECHO model and its significant improvement in perceived self-efficacy in caring for people with IDD during COVID-19 for a cohort encompassing both SSPs and HCPs. Improved confidence pre-post in all the core program competencies shows the ECHO model is an effective way to improve provider skills in supporting the mental health needs of people with IDD. Additionally, the ECHO-AIDD program saw a cascading effect resulting in sharing of knowledge by participants beyond the program, an effective "share and spread" strategy at the time of the pandemic. Participant feedback from open text responses shows that the program helped in expansion of knowledge and facilitated changes in practice at the time of COVID-19. Conceptually, the ECHO model is designed to develop a community of practice. This was validated in the qualitative feedback from participants. The pre- and post- evaluation of the program suggests participants felt that group participation helped to support their own wellbeing, especially their ability to cope with COVID-19 stressors.

Rapid design thinking and COVID-19

In the face of a rapidly spreading pandemic, with uncertainties and new challenges at an unprecedented level, there was a need for swift deployment of a capacity-building program that could cater to supporting the needs of both people with IDD, and the health and social service providers working with this underserved population. The rapid design thinking framework was instrumental in incorporating lessons learned from our previous ECHO capacity-building project to adapt to COVID-19 specific needs, and develop a purpose-built *prototype* and implement the design within a short timeframe. Rapid design thinking was a promising approach for this program. The

design thinking principles are helpful in volatile, uncertain, complex and ambiguous (VUCA) situations [30], and COVID-19 pandemic presents with VUCA conditions. Additionally, there is evidence in medical education literature to support the use of design thinking [20, 31, 32]. Similar to rapid design thinking, other agile methods can also be explored in development of similar programs. The attendance rate, high levels of satisfaction and retention suggest acceptability of the shortened 6-session program. Interestingly, retention rates were similar to the prior 12 -week ECHO program targeted towards the same audience. It may be that in a time of intense duress, people are better able to commit to a shorter intervention than a longer one, with enough support being conveyed over this short period to make a difference. More research is necessary to see if a brief program sees as much change as a longer one and whether attendance is better in one program or the other. Rapid prototyping and testing was a key aspect of the program. We utilized qualitative and quantitative findings from the previous iteration, and introduced several time-sensitive innovations including COVID-19 specific content such as advance care planning and care provider wellness. The "learn as you go" aspect of Rapid Design Thinking Framework was evident in the iterative nature of the model [17, 31] , guided by the weekly satisfaction surveys.

Innovations that made a difference

In contrast to other ECHOs designed to strictly focus on working with a population, or strictly addressing worker mental health, this course integrated both aspects. High levels of satisfaction with the innovations in the COVID-19 prototype may have contributed to its success. Participants appreciated the COVID-19 specific content of the program and almost all questionnaire respondents indicated intent to apply learning into practice. Curated COVID-19 information and weekly updates, self-care tips and family's perspective was prominent in participants' reflections on COVID-19 related innovations in the program. Several participants spoke about the mindfulness exercises and how it helped them to be more aware of their own wellness needs at the time of COVID-19. We

recognized that whilst it is important to provide practical clinical tools to providers; it is not enough

to address clinical needs without recognizing the impact of moral distress and injury of frontline care

providers[7]. The wellness checks and community mindfulness exercises were opportunities to share

ideas about coping at the time of COVID-19.   Participants also reflected on the program's

contribution as a virtual community of practice. "Feeling connected" and "we are not alone" came

out strongly in the reflections, an indicator of how this program brought professionals from disability

and health services sector together as a community. Sockalingam et al. (2020), concluded that virtual

communities of practice focused on self-care skills development and support for frontline healthcare

workers are needed to address emerging distress, fatigue and mental health needs during this

pandemic [15]. The curriculum was co-produced and co-delivered with a family advisor hub

member. Similar to descriptions in literature [33-35] , the family-centred care perspective was deeply

valued by participants. Training in partnership with patients and providers helps in developing

empathy and desired professional attitudes[35]. At a pedagogical level, this highlights the important

role of caregivers as educators and working in partnership to improve provision of care[36, 37].

Limitations

There are some limitations to consider when reviewing our evaluation findings. First, the data and

measures used in this evaluation are from a single cycle of an ECHO program specifically focused

on mental health in IDD populations in Ontario during COVID-19; as such, our findings may not

generalize to other cycles or settings. Future evaluation and research efforts will seek to replicate

these ECHO findings with other health conditions and settings. Additionally, findings for

satisfaction, and change in confidence and experience with COVID-19 pre-post participation were

informed by the data collected from individuals who completed satisfaction surveys and pre and post

questionnaires. This may introduce a response bias, whereby those who participated in these data

collection activities may have been more engaged and likely to respond with higher scores; however,

we recognize this challenge is not unique to our evaluation and exists for anyone collecting data via

surveys.

Future directions

Future iterations should incorporate targeted outcome measures to evaluate the role of ECHO in

addressing the mental health needs of care workers itself that are supporting people with IDD in the

community[15]. The virtual synchronous nature of the ECHO® model was valuable during the

pandemic as timing and outreach of the capacity building program was of essence and travel

restrictions was a major impediment to any in person training. Future work should also include the

perspective of adults with IDD in teaching. Emerging literature has highlighted the importance of

people with IDD in medical education [38,39].The role of "expert" patients as educators in the

ECHO model needs further exploration.

Although this study addressed self-efficacy and competency of learners, focus on retention

and effects of this in the medium to long-term will help in the design of future programs. Also,

evaluation of implementation outcomes will help understand the impact this educational intervention

further. Ethical implications and dynamics involved in coproducing educational content are

important future considerations [37]. We will continue with this program at a provincial and national

level as long as Canada continues to face COVID-19 related restrictions, and plan to measure longer-

term outcomes such as staff burnout and COVID-19 related stress in future iterations. Further,

scaling up capacity building initiatives nationally will help build a wider community of practice and

has implications for knowledge translation research at a systems level.

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Conflicts of interest

 None declared.

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Supplementary Files